REMARKS

I. Introduction

In response to the Office Action dated February 14, 2001, claims 1-4, 13, 51 and 52 have been canceled and new claims 54-77 have been added. Claims 5-12, 14-50 and 53 have been withdrawn as directed to a non-elected invention. Claims 54-77 remain in the application. Reconsideration of the application, as amended, is requested.

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made for the purpose of clarifying the language of the claims and were not required to distinguish the claims from the prior art. The amendments to the claims introduce no new matter, and their entry is respectfully requested.

Support for the new claims can be found in the application as originally filed, as indicated below.

Support for new claim 54 can be found in originally filed claim 1.

Support for new claims 55, 57, 59, 61, 65, 69, 72 and 75 can be found in the specification at page 14, lines 6-8.

Support for new claims 56 and 58 can be found in the specification at page 14, lines 10-11, at page 15, lines 11-14, and at page 29, lines 1-4.

Support for new claims 60 and 64 can be found in originally filed claim 4, and in the specification at page 14, lines 10-11, at page 15, lines 11-14, and at page 29, lines 1-4.

Support for new claims 62 and 66 can be found in the specification at page 35, line 36, to page 36, line 2.

Support for new claims 63 and 67 can be found in Example 2 of the specification at page 34, and in Figures 2 and 3.

Support for new claims 68 and 71 can be found in originally filed claim 3, and in the specification at page 15, lines 11-14, and at page 29, lines 1-4.

Support for new claims 70 and 73 can be found in the specification at page 14, lines 3-6 and line 26 to page 15, line 2.

Support for new claim 74 can be found in originally filed claim 13.

Support for new claim 76 can be found in originally filed claim 51, and in the specification at page35, line 36, to page 36, line 2.

Support for new claim 77 can be found in originally filed claim 52, and in the specification at page 35, line 36, to page 36, line 2.

II. Previous Amendments

Applicants respectfully request entry of the Amendment dated February 23, 2000, and submitted together with a response to a Notice to File Missing Parts and the Sequence Listing. A copy of the Preliminary Amendment dated February 23, 2000 is enclosed. This amendment introduced identification of SEQ ID NOS in the appropriate places in the specification and claims.

Applicants further request an indication as to the status of a Preliminary Amendment submitted on June 16, 2000, a copy of which is enclosed. In the event that the June 16, 2000 Amendment was not entered, Applicants respectfully request entry of this Amendment at this time.

III. Restriction Requirement

At page 2 of the Office Action, the Examiner acknowledged Applicants' election of Group I, claims 1-4, 13, 51 and 52, with traverse, and made final the requirement for restriction. Applicants have canceled claims 1-4, 13, 51 and 52, and presented new claims 54-66, also directed to the subject matter of Group I.

Upon identification of allowable subject matter, Applicants respectfully request the Examiner reconsider withdrawal of the restriction and election requirements, or rejoinder of groups not requiring a significant additional search effort.

IV. Sequence Rule Compliance

At page 2 of the Office Action, it was asserted that this application fails to comply with the requirements of 37 C.F.R. 1.821-25 because the sequences in Figures 2 and 3 are not accompanied by sequence identification numbers. Applicants respectfully direct the Examiner's attention to a Preliminary Amendment dated February 23, 2000, and submitted together with a response to a Notice to File Missing Parts and the Sequence Listing. A copy of the Preliminary Amendment dated February 23, 2000 is submitted herewith.

If this Amendment was not entered previously, Applicants respectfully request its entry at this time. The February 23, 2000 Amendment introduces sequence identification numbers in the appropriate portions of the specification, including the Brief Description of Figures 2 and 3.

V. Rejections Under 35 U.S.C. §101

At pages 4-5 of the Office Action, claims 1-4, 13, 51 and 52 were rejected under 35 USC §101 because the claimed invention allegedly is not supported by either a specific asserted utility or a well-established utility. It is further stated that it is not clear whether the claimed polypeptide of SEQ ID NO: 2 even exists in nature, and that the utility for the PHELIX protein is not credible because the actual overexpression of PHELIX as a protein in cancer tissues is questionable. The cancellation of claims 1-4, 13, 51 and 52 renders this rejection moot.

Applicants state the following, however, for the record. The disclosed utility of the PHELIX protein for the diagnosis and treatment of cancer is specific, credible and well-established to those of ordinary skill in the art. The utility is specific because it relates to a property that is specific to the PHELIX protein: its highly restricted pattern of expression, wherein the protein is not expressed in normal tissues, except for testis, and is highly expressed in certain cancers, including prostate cancer. The utility is credible and well-established, as those skilled in the art

consider the diagnosis and/or treatment of cancer with a protein whose expression is tissue-specific to be reasonable.

Evidence that PHELIX protein expression is restricted to testis among normal tissues is demonstrated in Figures 4, 5 and 7, which show the results of Northern and RT-PCR analyses. Evidence of the up-regulation of PHELIX protein in cancers is shown in Figures 6 and 7, which show the results of Northern and RT-PCR analyses of prostate cancer xenografts and cancer cell lines derived from prostate and other cancers. The prostate cancer xenograft is an art-recognized animal model for human prostate cancer that uses tumor tissue from human prostate cancer patients and recapitulates the stagewise progression of prostate cancer. These data would be interpreted by those skilled in the art to indicate that PHELIX protein is useful in the diagnosis and treatment of prostate and other cancers.

The only basis for questioning this utility that is raised in the Office Action is the inference that mRNA expression is not predictive of expression of the corresponding protein. The statement is made at page 4 of the Office Action that it is well known in the art that a gene could be regulated at different levels, transcriptional, translational and post-translational regulation, and that not all mRNAs express as proteins. An example is given of a lack of correlation between p53 mRNA levels and p53 protein levels in blast cells from patients with acute myelogenous leukemia. However, these statements do not address the legal standard for determining utility of claimed subject matter. A proper utility inquiry addresses whether one skilled in the art would find it more likely than not that PHELIX protein is expressed in cancerous tissues but not in normal tissues, except for testis, given the mRNA expression data disclosed in the application (See MPEP §2107.01, citing *In re Oetiker*, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992), and *In re Brana*, 34 USPQ2d 1436 (Fed. Cir. 1995), for discussion of the "preponderance of evidence" or "more likely than not" standard).

The Patent Office apparently takes the position that mRNA expression data is not reasonably predictive of protein expression, although the Office relies solely on a single exceptional circumstance to support this position. A single (or even a few) exception(s) to what is generally observed does not support a position that those skilled in the art do not expect overexpression of mRNA to be predictive of overexpression of the corresponding protein. Applicants respectfully

disagree with the Examiner's rejection because the Patent Office has taken a position that is contrary to the "central dogma" of genetics (DNA → RNA → protein). An exception to the general rule does not negate the central dogma as representing what one skilled in the art reasonably expects in view of data demonstrating overexpression of PHELIX mRNA. The Patent Office has identified a single example in which mRNA expression does not necessarily dictate translation of a polypeptide. The Office has not provided evidence that one skilled in the art ***more likely than not*** would fail to expect translation of the PHELIX protein in accordance with the central dogma of genetics.

Moreover, the specification discloses evidence that expression of PHELIX polynucleotides is correlated with expression of PHELIX protein. Example 6, at page 36, demonstrates the expression of a cDNA encoding PHELIX in transfected 293T cells and the detection of PHELIX protein by these transfected cells using antibodies directed against PHELIX protein (Figure 8). In addition, Example 13, at pages 40-41, demonstrates the use of these antibodies to detect PHELIX protein in whole cell lysates and subcellular fractions of PHELIX-expressing cells using Western analysis (Figure 9). This latter Example and the data shown in Figure 9, in addition to demonstrating the correlation between PHELIX polynucleotide and PHELIX protein expression, also confirm the expression of PHELIX in the nuclei as expected for a protein having a nuclear localization signal and a basic helix loop helix structural motif.

Further evidence that the disclosure of Applicants' specification presents a credible utility for PHELIX protein is provided in a Declaration Under 37 CFR §1.132 by Rene S. Hubert, Ph.D., submitted herewith. Dr. Hubert is a named inventor in the present application, and is skilled in the art of molecular biology. In this Declaration, Dr. Hubert states that, based on the highly restricted pattern of mRNA expression, wherein PHELIX is not expressed in normal tissues, except for testis, and is highly expressed in certain cancers, including prostate cancer, PHELIX protein is expected to be useful as a diagnostic and therapeutic tool for the detection and treatment of cancers expressing PHELIX. Dr. Hubert's Declaration also provides additional evidence confirming the expression of PHELIX protein and the correlation between expression of PHELIX polynucleotides and expression of PHELIX protein. This additional evidence includes immunohistochemical data

showing the detection of PHELIX protein in the cytoplasm of 293T cells transfected with an expression vector containing DNA encoding PHELIX, and not in untransfected 293T cells.

Applicants therefore respectfully maintain that the specification discloses a specific, credible and substantial utility for PHELIX protein, and that the utility rejection should be withdrawn.

VI. Rejections Under 35 U.S.C. §112

A. Rejection Under Second Paragraph of §112

At page 3 of the Office Action, claim 13 was rejected under 35 U.S.C. §112, second paragraph as being indefinite because it depends on non-elected claim 12.

Claim 13 has been canceled. The rejection of this claim is now moot.

B. Rejection Under First Paragraph of §112 re Biological Deposit

At page 3 of the Office Action, claim 13 was rejected under 35 U.S.C. §112, first paragraph as allegedly containing subject matter which was not adequately described in the specification, including the name and address of the depositor, where the plasmid is deposited and the date of deposition. At page 3 of the Office Action, the Examiner indicated that an affidavit or declaration stating that all restrictions upon public access to the deposit will be irrevocably removed upon the granting of a patent on this application is required.

Although the cancellation of claim 13 renders these rejections moot, Applicants have amended page 35 of the specification to include the address of the depository authority, the American Type Culture Collection (ATCC). Applicants further note that page 35, lines 1-3 of the specification includes the name of the depository authority and the date of deposition. In addition, Applicants attach herewith for the record a statement that the deposit of ATCC Accession No. 98956 referred to on page 35, lines 1-3, of the specification has been accepted by an International Depository Authority under the provisions of the Budapest Treaty, and all restrictions upon public access to the deposit will be irrevocably removed upon the grant of a patent on this application, and

the deposit will be replaced if viable samples cannot be dispensed by the depository. Applicants therefore assert that all of the conditions of 37 CFR §§ 1.801-1.809 have been met.

C. Rejection Under First Paragraph of §112 re Written Description

At pages 5-9 of the Office Action, an assertion was made that the specification allegedly does not reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Although not explicitly stated in the Office Action, the discussion in the Office Action implies that claims 1-4 were rejected under 35 U.S.C. §112, first paragraph, for allegedly lacking an adequate written description, as it is stated for example, that "only a polypeptide of SEQ ID NO: 2, encoded by SEQ ID NO: 1, but not the full breadth of the claims meet the written description provisions of 35 USC 112, first paragraph". In view of the cancellation of claims 1-4, this apparent rejection is now moot.

For the record, however, Applicants state the following. The citation of *The Regents of the University of California v. Eli Lilly* (43 UPSQ2d 1398) at pages 5-6 of the Office Action refers to a holding that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. Applicants note that claims 1-4 do not define the genus by function only. Each of these claims defines the genus with reference to the specific amino acid sequence (SEQ ID NO: 2) disclosed in the specification. Each element of claims 1-4 can be defined structurally by reference to SEQ ID NO: 2.

Moreover, at page 6 of the Office Action, it is asserted that the specification provides no description of conserved regions, which sites may tolerate variability, or information regarding the relation of structure to function. Applicants respectfully point out that this assertion is incorrect. The specification discloses several portions of the PHELIX protein that are of structural and functional significance, and provides guidance in the selection of regions which may tolerate variability, the identification of conserved regions and information regarding the function of particular portions of the protein.

More specifically, the specification describes an immunogenic fragment of 15 contiguous amino acids of SEQ ID NO: 2 at page 17, line 23 and again in Example 5 at pages 35-36, which

example demonstrates the usefulness of this 15-mer in the generation of antibodies capable of binding and detecting PHELIX proteins. Figure 2 identifies a basic helix loop helix domain with underlining (amino acid residues 140-189 of SEQ ID NO: 2) and two nuclear localization signals are boxed (amino acid residues 134-150 and 163-169 of SEQ ID NO: 2). Figure 3 identifies regions of PHELIX that are homologous with basic helix loop helix domains of transcription factors Max (of rat; amino acid residues 140-169 of SEQ ID NO: 2) and Mxi (of zebrafish; amino acid residues 140-163 of SEQ ID NO: 2). These structural and functional features of PHELIX are discussed further at pages 8-9 of the specification.

The specification also provides data confirming the validity of the structural information indicated in Figure 2. Example 13, at pages 40-41, demonstrates the use of the antibodies raised against the 15-mer PHELIX fragment to detect PHELIX protein in whole cell lysates and subcellular fractions of PHELIX-expressing cells using Western analysis (Figure 9). This latter Example and the data shown in Figure 9 also confirm the expression of PHELIX in the nuclei as expected for a protein having a nuclear localization signal and a basic helix loop helix structural motif.

In addition, Applicants respectfully point out that, contrary to the assertion at page 9 of the Office Action, claims 1 and 3, as well as the remaining claims, are consistent with the Written Description Guidelines (Federal Register 66(4), 1099, January 5, 2001). As stated in the Written Description Guidelines Training Materials issued by the Patent and Trademark Office, a specification that discloses a full-length cDNA adequately supports a claim to sequences comprising the full-length cDNA (see Example 8 at pages 33-35), and a claim to a protein having the recited sequence is supported by disclosure of the protein's sequence (see Example 13 at pages 50-51). Claims to fragments or polypeptides having a high degree of homology are supported by a written description that includes several examples of such encompassed embodiments and defines features of the encompassed variants (see Examples 13 and 14 at pages 50-55).

At page 6 of the Office Action, it is asserted that structural features that could distinguish the compounds in the genus from others excluded are missing from the disclosure. This statement is not true. All elements of claims 1-4 are structurally determined with regard to the specific amino

acid sequence of SEQ ID NO: 2. At pages 14-16, the specification describes structural features of PHELIX proteins and polypeptides, including fragments of the amino acid sequence described in SEQ ID NO: 2. For example, page 15, lines 12-14, of the specification indicates that PHELIX polypeptides of the invention "exhibit properties of the PHELIX protein, such as the ability to elicit the generation of antibodies which specifically bind an epitope associated with the PHELIX protein."

D. Rejection Under First Paragraph of §112 re Enablement

At pages 9-13 of the Office Action, claims 1-4, 13, 51 and 52 were rejected under 35 U.S.C. §112, first paragraph, because the claimed invention is allegedly not supported by a well-established utility and a clear written description such that one skilled in the art would not know how to use the claimed invention, and because it is allegedly questionable that the claimed compositions could be used as a vaccine for treating cancer. In view of the cancellation of claims 1-4, 13, 51 and 52, this rejection is now moot.

E. Rejection Under First Paragraph of §112 re Scope

At pages 13-14 of the Office Action, claims 1, 3 and 4 were rejected under 35 U.S.C. § 112, first paragraph, because the specification allegedly does not reasonably provide enablement for a polypeptide which is at least 90% identical to SEQ ID NO: 2 over its entire length, and a polypeptide of at least 15 contiguous amino acids of a polypeptide which is at least 90% identical to SEQ ID NO: 2 over its entire length. The rejection is based on an assertion, at page 13 of the Office Action, that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. In view of the cancellation of claims 1, 3 and 4, this rejection is now moot.

For the record, however, Applicants note that the assertion at page 14 of the Office Action that protein chemistry is unpredictable because of some examples of single amino acid substitutions or other chemical modifications that can dramatically affect the biological activity of a protein represents a misapplication of the legal standard for 35 USC §112, first paragraph. Moreover,

Applicants respectfully assert that one of ordinary skill in the art can readily make and use the PHELIX proteins and polypeptides of the invention.

Enablement does not require that all encompassed embodiments be operative, but rather that one skilled in the art can identify operative embodiments without engaging in undue experimentation. (MPEP §2164.06) "'The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed.'" (*In re Wands,* 8 USP2d 1400 (Fed. Cir. 1988) (citing *In re Angstadt,* 190 USPQ 214 (CCPA 1976)).

Applicants' specification provides ample guidance to the skilled artisan seeking to confirm whether a candidate variant has the biological activity of a PHELIX protein having the amino acid sequence of SEQ ID NO: 2. For example, the specification describes, at page 16, line 29, to page 19, line 24, methods for identifying PHELIX proteins and variants using antibodies directed against PHELIX, as well as methods for generating such antibodies. In addition, Example 5, at pages 35-36, and also Example 8, at pages 37-38, of the specification, describes the production of antibodies to PHELIX. Example 13, at pages 40-41, demonstrates the use of such antibodies to detect PHELIX using Western analysis. The use of these techniques to identify operative variants of the PHELIX protein of SEQ ID NO: 2 is routine, is well within the skill of those in the art, and does not require undue experimentation. Moreover, the arguments raised in the Office Action do not establish that all or most variants lack biological activity, nor do they refute Applicants' position that those skilled in the art are capable of generating useful variants of the PHELIX protein with a reasonable expectation of success.

VII. Rejections Under 35 USC §102

A. Genbank Accession No. AA293855

At page 15 of the Office Action, claims 2 and 4 were rejected under 35 U.S.C. § 102(a or b), as allegedly anticipated by Hillier et al. (Genbank Accession No. AA293855). Claims 2 and 4 have been canceled, rendering this rejection moot.

For the record, however, Applicants respectfully point out that Hillier does not teach or suggest the subject matter of claims 2 or 4. Claims 2 and 4 are drawn to polypeptides, while Hillier discloses a polynucleotide sequence that is 491 bases in length and includes 4 mismatches within the region of alignment. This polynucleotide is not a full-length cDNA, nor does it indicate a start codon or other indication of a reading frame. The Hillier reference does not teach or suggest a protein or polypeptide, and in particular, it does not teach a PHELIX protein or polypeptide of claim 2 or 4.

B. Genbank Accession No. R13043

At page 16 of the Office Action, claims 2 and 4 were rejected under 35 U.S.C. § 102(b), as allegedly anticipated by Hillier et al. (Genbank Accession No. R13043). Claims 2 and 4 have been canceled, rendering this rejection moot.

For the record, however, Applicants respectfully point out that Hillier does not teach or suggest the subject matter of claims 2 or 4. Claims 2 and 4 are drawn to polypeptides, while Hillier discloses a polynucleotide sequence that is 422 bases in length and includes 13 mismatches and 2 gaps within the region of alignment. This polynucleotide is not a full-length cDNA, nor does it indicate a start codon or other indication of a reading frame. The Hillier reference does not teach or suggest a protein or polypeptide, and in particular, it does not teach a PHELIX protein or polypeptide of claim 2 or 4.

VIII. Rejections Under 35 USC §103

At page 15 of the Office Action, claims 2 and 52 were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Hillier et al. (Genbank Accession No. AA293855) and Hillier et al. (Genbank Accession No. R13043) in view of Johnstone and Thorpe (Immunochemistry in Practice, 2nd Ed., 1987, pages 49-50). Claims 2 and 52 have been canceled, rendering this rejection moot.

For the record, however, Applicants respectfully point out that none of the references teaches or suggests a polypeptide, as discussed above. Since all elements of claims 2 and 52 are not found in the art, the claimed invention cannot be obvious.

IX. Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

GATES & COOPER LLP
Attorneys for Applicant(s)

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Date: July 16, 2001

By: _____
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KSC/
G&C 129.27-US-U2

APPENDIX: VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend the specification as follows:

At page 1, line 2, please insert the following paragraph:

This application claims the benefit of United States provisional patent applications number 60/106,524, filed October 31, 1998, now abandoned, and number 60/098,610, filed August 31, 1998, the entire contents of each of which are incorporated herein by reference.

Please replace the paragraph at page 35, lines 1-3, of the specification with the following paragraph:

--The full length PHELIX cDNA (pPHELIX, clone GTP1C12) was deposited with the American Type Culture Collection, 10801 University Boulevard, Manassas, VA 20110-2209, on October 22, 1998 and has been accorded ATCC accession number 98956.--

At page 41, please delete the paragraph at lines 8-11.

ATTORNEY DOCKET NO. 1703-018.US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Danny E. Afar et al.
Serial No	:	09/389,000
Filed	:	August 31, 1999
For	:	PHELIX: A TESTIS-SPECIFIC PROTEIN EXPRESSED IN CANCER

February 23, 2000

Honorable Assistant Commissioner for Patents
Washington, D.C. 20231

SIR:

PRELIMINARY AMENDMENT

IN THE SPECIFICATION:

Please amend the specification of the above-referenced application as follows:

Please enter the Sequence Listing submitted concurrently herewith at the end of the specification.

At page 6, line 2, please insert –(SEQ ID NOS. 1 and 2, respectively)-- after "GTP1C12)".

At page 6, line 9, please insert –(SEQ ID NOS. 3 and 4, respectively)-- after "Max and Mxi".

At page 9, line 31, please insert –(SEQ ID NOS. 1 and 2)-- after "shown in FIG. 2".

At page 10, line 19, please insert –(SEQ ID NO. 1)—after "shown in FIG. 2".

At page 10, line 23, please insert –(SEQ ID NO. 1)—after "FIG. 2".

At page 10, line 28, please insert –(SEQ ID NO. 1)—after "shown in FIG. 2".

At page 11, line 11, please insert –(SEQ ID NO. 1)— shown in FIG. 2".

At page 12, line 6, please insert –(SEQ ID NO. 1)—after "(FIG. 2)".

At page 14, line 14, please insert –(SEQ ID NO. 2)—after "shown in FIG. 2".

At page 15, line 18, please insert –(SEQ ID NO. 2)—after "shown in FIG. 2".

At page 17, line 19, please insert –(SEQ ID NO. 2)—after "of FIG. 2".

At page 17, line 32, please insert –(SEQ ID NO. 2)—after "shown in FIG. 2".

At page 20, line 12, please insert –(SEQ ID NO. 1)—after "(FIG. 2)".

At page 31, line 7, please insert –(SEQ ID NO. 5)-- after "DPNCDN (cDNA synthesis primer)".

At page 31, line 10, please insert –(SEQ ID NO. 6)-- after "Adaptor 1".

At page 31, line 13, please insert –(SEQ ID NO. 7)-- after "Adaptor 2".

At page 31, line 16, please insert –(SEQ ID NO. 8)-- after "PCR primer 1".

At page 31, line 19, please insert –(SEQ ID NO. 9)-- after "Nested primer (NP) 1".

At page 31, line 22, please insert –(SEQ ID NO. 10)-- after "Nested primer (NP) 2".

At page 34, line 1, please insert –(SEQ ID NO. 11)—after " 5'- CTG CGT ACT CTC TTG CCG TAT GT -3' ".

At page 34, line 2, please insert –(SEQ ID NO. 12)-- after " 5'- GCT CAA TGG GTG TTT GTT GTT TCT -3' ".

At page 34, line 16, please insert – (SEQ ID NO. 1) – after "shown in FIG. 2".

At page 34, line 29, please insert – (SEQ ID NO. 2) – after "(FIG. 2)".

IN THE CLAIMS:

Please amend claims 1, 5, and 31 as follows:

1. (Amended) An isolated PHELIX protein having the amino acid sequence as shown in FIG. 2 (SEQ ID NO. 2).

5. (Amended) An isolated polynucleotide selected from the group consisting of (a) a polynucleotide having the sequence as shown in FIG. 2 (SEQ ID NO. 1), wherein T can also be U; (b) a

polynucleotide having the sequence as shown in FIG. 2 (SEQ ID NO. 1), from nucleotide residue number 735 through nucleotide residue number 1949, wherein T can also be U; (c) a polynucleotide encoding a PHELIX polypeptide whose sequence is encoded by the cDNA contained in the plasmid as deposited with American Type Culture Collection as Accession No. 98956; and (d) a polynucleotide encoding the PHELIX protein of claim 1.

31. (Amended) An assay for detecting the presence of a PHELIX polynucleotide in a biological sample, comprising

(a) contacting the sample with a polynucleotide probe which specifically hybridizes to the PHELIX cDNA contained within the plasmid as deposited with American Type Culture Collection as Accession No. 98956, or the polynucleotide as shown in FIG. 2 (SEQ ID NO. 1), or the complements thereof; and

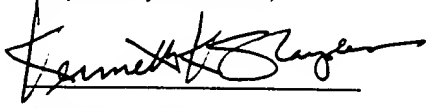
(b) detecting the presence of a hybridization complex formed by the hybridization of the probe with PHELIX polynucleotide in the sample, wherein the presence of the hybridization complex indicates the presence of PHELIX polynucleotide within the sample.

REMARKS:

The above amendments enter the Sequence Listing filed in connection with the instant application into the specification and the corresponding SEQ ID NOs into the specification and claims. No new matter has been introduced by the above amendments and entry thereof is respectfully requested.

No fee is deemed necessary in connection with the filing of this Amendment.

Respectfully submitted,



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415/663-0323

Receipt of the following filed in the United States Patent and Trademark Office on February 23, 2000, Express Mail No. **EJ582403461US** is hereby acknowledged:

Serial No. 09/389,000
Atty. Docket No. 1703-018.US1

1. Response to Notice to File Missing Parts and petition for extension of time under 37 CFR 1.136(a); Inventors' combined Declaration and Power of Attorney; payment of the required fees; copy of the Notice;

2. Submission of Sequence Listing in compliance with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures; Paper and computer readably copies of the Sequence Listing; Declaration Pursuant to 37 CFR 1.821(f).

3. Preliminary Amendment.

EJ582403461US

ATTORNEY DOCKET NO. 1703-018.US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	Danny E. Afar et al.
Serial No	:	09/389,000
Filed	:	August 31, 1999
For	:	PHELIX: A TESTIS-SPECIFIC PROTEIN EXPRESSED IN CANCER

June 16, 2000

Honorable Assistant Commissioner for Patents
Washington, D.C. 20231

SIR:

PRELIMINARY AMENDMENT

IN THE SPECIFICATION:

Please amend the specification of the above-referenced application as follows:

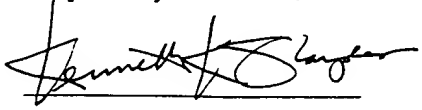
At page 11, line 10, please delete "polypeptides" and insert -polynucleotides--.

At page 41, line 10, please delete "37 USC 119(e)" and insert -35 USC 119(e)--.

REMARKS:

The above amendments to the specification merely correct two typographical errors. No new matter has been introduced by the above amendments and entry thereof is respectfully requested. No fee is deemed necessary in connection with the filing of this Amendment.

Respectfully submitted,



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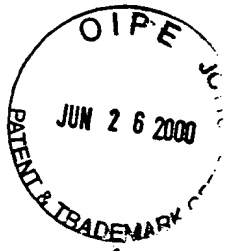
Receipt of the following filed in the United States Patent and Trademark Office on June 14/16, 2000, is hereby acknowledged:



Serial No. 09/389,000
Atty. Docket No. 1703-018.US1

1. Transmittal Letter

2. Preliminary Amendment

3. REQUEST FOR CORRECTION of FILING RECEIPT